In the method of Claims 33-35, as amended as described above, a nucleic acid is bound to a polypeptide (antigen) and the nucleic acid bound polypeptide is subsequently fixed onto particles (see Claim 33). Following immobilization, the particles are allowed to react with a sample containing the antibody corresponding to the polypeptide (antigen).

In sharp contrast to the presently claimed invention, in Thomas et al, after the antigen-antibody reaction, a label-monomer attached to the antigen-antibody complex is subjected to additional polymerization, thereby separating the antigen-antibody complex from the free (i.e., unreacted) reactants (see Claim 1). However, the present invention does not include and/or require a polymerization separation step.

The method of pending Claims 33-35 is also distinct from Thomas et al, in that it utilizes binding (i.e., agglutination) between the nucleic acid and the polypeptide through a nucleic acid-binding motif in the polypeptide. At no point do Thomas et al disclose or suggest such an interaction. The standard for determining anticipation requires that the reference "must teach every element of the claim" (MPEP §2131). Therefore, the absence of any disclosure by Thomas et al of binding (i.e., agglutination) between the nucleic acid and the polypeptide through a nucleic acid-binding motif in the polypeptide would necessarily make this reference fail to anticipate the present invention.

Withdrawal of this ground of rejection is requested.

The rejection of Claims 33-40 under 35 U.S.C. §112, first paragraph, as introducing new matter is traversed.

As stated in the Amendment and Request for Reconsideration filed February 11, 2002, the claimed method is clearly described in Example 5 on pages 27-29 of the specification. As shown in Table 2 of the specification at page 29 (reproduced below for the Examiner's

convenience), the Applicants have compared the immune reactivity of HCV antigen-fixed gelatin particles in the absence of DNA (120NA, 120K10, and 120) and the presence of DNA (120NA(+)):

TABLE 2

Immune Reactivity Tests of HCV Core Antigens

Name of Core Antigen	Positive Serum 1	Positive Serum 2	#2-7
120NA(+)	6+	7	8
120NA	<3	<3	7
120K10	<3	<3	6
120	<3	<3	4

An immune reactivity was judged as "positive" when "n" is greater than 4 based on a dilution rate of 2^n (page 28, lines 15-18). A positive immune reactivity for HCV-positive serum 1 and 2 could only be detected when the HCV antigen-fixed gelatin particles were in the presence of DNA (6+ and 7 for 120 NA(+), respectively). Therefore, the antigenic properties of the polypeptide to the antibody were increased by binding the polypeptide to a nucleic acid.

Specifically, Table 2 shows that by binding a nucleic acid to the polypeptide (antigen) on the particles, the corresponding antibody in a sample was able to be assayed (the results of 120NA(+)). In contrast, without the nucleic acid bound to the polypeptide, the corresponding antibody in the sample was not able to be assayed (the results of 120NA, 120K10, 120). Therefore, it is apparent that the immunological reactivity of the polypeptide was increased in the agglutination immunoassay by binding the nucleic acid to the polypeptide.

Accordingly, Applicants submit that the introduction of "a method for increasing immunological reactivity of a polypeptide in an agglutination immunoassay" would not constitute new matter. Withdrawal of this ground of rejection is requested.

The rejection of Claims 25-40 under 35 U.S.C. §112, first paragraph, is obviated in part by amendment and traversed in part.

MPEP §2164.04 states:

> "A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support."

Therefore, the detailed method should be described in the specification, and not in the claims. A claim is the definition defining what the invention is, and not a disclosure which enables those skilled in the art to practice the invention.

At page 6, line 17 to page 9, line 20, the Applicants fully disclose the acceptable polypeptides and nucleic acids to be bound thereto, for use in the present inventive method. Moreover, on page 10, line 2 to page 12, line 2 the Applicants provide a detailed explanation of how to practice the inventive method. The utility of these methods is demonstrated at page 14, line 8 to page 47, line 8 where the Applicants present 17 Examples and 4 Reference Examples, which clearly provide adequate disclosure to fully enable the skilled artisan to practice the claimed invention.

Moreover, most of the "requirements" pointed out by the Examiner are inherently included in the term "agglutination immunoassay," and as such would be readily apparent to the skilled artisan with the aid of the present specification. And, it is with this specification

as a guide that the skilled artisan would be able to practice the methods of the present invention.

At page 4, line 11 of the Office Action (paper number 17); the Examiner asserts that "an agglutination assay requires a bivalent binding moiety... however the claims fails to recite such a binding moiety." However, Applicants submit that a bivalent binding moiety is not necessary. As exemplified in Example 5 (a summarized above), each molecule of the polypeptide (antigen) is bound on a particle, and what is measured is an antibody corresponding to the polypeptide (antigen). Such an antibody is a usual antibody contained in a positive serum (see Example 5) which does not have the bivalent binding moiety. Accordingly, further amendment to insert a "bivalent binding moiety" is not necessary.

For all the reasons set forth above, the present invention is believed to be in compliance with 35 U.S.C. §112, first paragraph. As such, withdrawal of this ground of rejection is requested.

The rejection of Claims 25-40 under 35 U.S.C. §112, second paragraph, are believed to be obviated by amendment. Applicants request withdrawal of this ground of rejection.

Applicants submit that the present application is now in condition for allowance.

Early notification of such action is earnestly solicited.

Respectfully submitted,

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IN THE CLAIMS

--25. (Twice Amended) An agglutination immunoassay for assaying an antigen, comprising a polypeptide [an antigen and either a polypeptide or an antibody corresponding to said antigen, or both, wherein said antigen is a nucleic acid-bound polypeptide which is produced by], wherein said immunoassay comprises:

(a) preparing a nucleic acid-bound polypeptide by binding a nucleic acid to said polypeptide through a nucleic acid-binding motif in said polypeptide, and fixing said nucleic acid-bound polypeptide

[(A) binding a nucleic acid to a polypeptide;

(B) fixing said nucleic acid-bound polypeptide] on the surface of [a] particles; [and wherein said immunoassay further comprises:]

what particles?

[(i)] (b) contacting the particles obtained in (a) with a sample, wherein said sample may contain an antibody to said antigen [said antigen with said antibody]; and

[(ii)] (c) [detecting the resultant] measuring agglutination of said particles caused by formation of antigen-antibody complex.

33. (Amended) A method for increasing immunological reactivity of a polypeptide in an agglutination immunoassay utilizing agglutination of particles on which said polypeptide is bound, said method comprising binding a nucleic acid to said polypeptide through a nucleic acid-binding motif in said polypeptide.--

how increase Imm. reactivity?